



U.S. Department of Energy

Implementation Plan for the “*Federal Leadership in High Performance and Sustainable Buildings*” Memorandum of Understanding

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EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE) is committed to implementing the Federal Leadership in High Performance and Sustainable Buildings (HPSB) Memorandum of Understanding (MOU). The MOU establishes a common set of Guiding Principles to: 1) employ integrated design principles; 2) optimize energy performance; 3) protect and conserve water; 4) enhance indoor environmental quality; and 5) reduce environmental impact of materials.

As stated in its Strategic Plan, DOE is committed to “build, modernize, and maintain facilities and infrastructure to achieve mission goals and ensure a safe and secure workplace,” and to “reduce overall facility square footage and improve energy efficiency and sustainability.” DOE defines the requirements of this policy for new building acquisitions primarily through DOE Order 413.3A, *Program and Project Management for the Acquisition of Capital Assets*. The Order requires HPSB principles to be considered and incorporated into the planning and construction process for all projects over \$20M. This plan will also define the process for applying HPSB considerations for projects less than \$20M, including renovations.

DOE will undertake the following actions toward implementing the MOU and measuring results, which will be evaluated through the Office of Management and Budget (OMB) Scorecard process:

Action 1: Coordinate DOE Policies and Establish Programmatic Framework

This activity will involve coordinating programs and offices throughout DOE to review the existing policy framework, assess the status of current HPSB practices and accomplishments across the Department, and formulate a consensus set of recommendations to senior management for achieving the goals of the MOU. Specific tasks include (1) coordinating the Plan throughout the Department and assigning responsibilities; (2) implementing key programmatic framework activities; (3) reviewing the Implementation Plan and revising as necessary (4) assessing the utilization of Integrated Project Teams; and (5) reporting past success stories and lessons learned. Action 1 will be completed by the end of CY 2007.

Action 2: Implement New Building Programs and Develop Existing Building Strategy

This activity will take place throughout CY 2008 and involve evaluating the effectiveness of DOE’s program for implementing the MOU Guiding Principles. Using inventories established in Action 1 for new construction, DOE will track, measure and report progress in implementing its HPSB program. A “sustainable recommissioning” strategy for incorporating the MOU Guiding Principles into existing buildings will also be formulated for implementation over the long term.

Action 3. Implement Existing Building Strategy

This will be an ongoing action throughout the period CY 2009-2012. DOE will first develop an inventory of existing facilities and prioritize them for HPSB enhancements using the recommissioning strategy developed in Action 2. Progress toward implementing HPSB measures in the high-priority existing buildings will be tracked and reported, along with progress throughout the agency’s overall existing building inventory.

In conclusion, the Plan provides a roadmap for incorporating the Guiding Principles of the MOU into major new and existing buildings for the long term, as well as an overview of DOE success stories with regard to HPSB.

INTRODUCTION

On January 24, 2006, the U.S. Department of Energy (DOE) signed the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (MOU) to commit to Federal leadership in implementing common strategies for planning, acquiring, siting, designing, building, operating, and maintaining high performance and sustainable buildings. Twenty-one agencies, including DOE signed the MOU.¹ The MOU establishes a common set of Guiding Principles to: 1) employ integrated design principles; 2) optimize energy performance; 3) protect and conserve water; 4) enhance indoor environmental quality; and 5) reduce environmental impact of materials. These Guiding Principles will help DOE achieve the following MOU goals:

- **Reduce** the total ownership cost of facilities;
- **Improve** energy efficiency and water conservation;
- **Provide** safe, healthy, and productive built environments; and
- **Promote** sustainable environmental stewardship

The Guiding Principles provide for many other benefits as well. Integrated design, for example, advances coordination during the design phase, thereby improving the design itself and reducing costs. The goals for decreased energy and water consumption create both substantial operating savings and protection of scarce supplies. Investment in indoor environmental quality creates improvements in areas such as air quality and lighting quality, which increases workers' productivity and reduces absenteeism. Minimizing the environmental impact of materials increases recycling rates, promotes environmentally preferable materials such as bio-based products, and reduces waste going to landfills.

DOE will implement the terms of the MOU through the execution of three major actions: the first action will establish an integrated programmatic framework for incorporating the Guiding Principles. The second action will implement the framework for new building construction and develop a long-term strategy for existing buildings. The third action will implement the existing building strategy and set specific goals for achieving High Performance Sustainable Building (HPSB) across the Department.

The development of this Implementation Plan has been accomplished by an *ad hoc* Sustainable Buildings Working Group from across DOE, with representatives from each of the key stakeholder offices. This Team will continue to lead the effort in extending DOE's current successes in HPSB across the Department. A listing of the members of the Working Group can be found in Appendix C.

DOE POLICIES RELATED TO HPSB

DOE has an established sustainable design/green buildings policy. As stated in its Strategic Plan, DOE committed to "build, modernize, and maintain facilities and infrastructure to achieve

¹ The Federal Leadership in High Performance and Sustainable Buildings MOU can be found at <http://www.wbdg.org/sustainablemou/mou.php#id>. This document contains the actual signatures for the 21 signatory agencies.

mission goals and ensure a safe and secure workplace,” and to “invest in the infrastructure to reduce overall facility square footage and improve energy efficiency and sustainability.” DOE defines the requirements of this policy primarily through two directives. DOE Order 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, requires HPSB principles to be explicitly considered and incorporated into each phase of the building construction process. DOE Order 430.2A, *Departmental Energy and Utilities Management*, requires application of sustainable design principles to new buildings and consideration of energy efficiency and sustainable design for building alterations. DOE Order 450.1, Chg2, *Environmental Protection Program* also supports HPSB. This Order establishes pollution prevention and environmental stewardship goals for all DOE sites to achieve through the use of Environmental Management Systems (EMS). The Order also includes a “green” building strategy, which specifies the application of sustainable building design criteria when planning and constructing new facilities, or modifying existing facilities. This strategy seeks to optimize life-cycle costs, reduce pollution, minimize energy consumption, conserve water, and enhance indoor air quality, worker safety and productivity.

DOE DEFINITION OF APPLICABLE NEW BUILDINGS AND PROJECTS

The DOE Acquisition Management System establishes principles and processes to translate user needs and technological opportunities, including HPSB considerations, into reliable and sustainable facilities, systems, and assets. The system is organized by project phases and Critical Decisions (CDs) in which alternatives and requirements (including HPSB requirements) are analyzed and incorporated into capital asset management. The system requirements are defined in DOE Order 413.3A. An overview of key provisions in the Order is provided in Appendix B. By following Order 413.3A, DOE ensures that all capital asset building construction projects are executed in full compliance with OMB Circular A-11 Part 7 Section 300 *Planning, Budgeting, Acquisition, and Management of Federal Capital Assets*.

The requirements of Order 413.3A are mandatory for all projects having a total project cost (TPC) greater than \$20M. In addition, the Project Management principles of the Order apply to those buildings with TPCs greater than \$5M. In fact, DOE has already entered five major success stories in the High Performance Federal Building database. As discussed below, DOE plans to evaluate a programmatic framework and strategy for implementing the Guiding Principles in existing buildings, leases, build-to-lease projects, as well as renovations costing less than \$20M. DOE plans to execute the framework and strategy through the following three overall actions, which are summarized into a preliminary project plan in Appendix E.

ACTION 1: COORDINATE DOE POLICIES AND ESTABLISH PROGRAMMATIC FRAMEWORK

This action initiates Department-wide implementation of the MOU and will be completed by the end of CY 2007. It involves formal coordination of the plan and the cooperation of a diverse set of programs and offices to review DOE’s existing policy framework. This action will assess the status of current HPSB practices, accomplishments, and available resources across the Department, and will formulate a consensus set of recommendations to senior management for

achieving the long-term goals of the MOU. Action 1 will be accomplished via the four sub-actions described below.

Action 1.1: Coordinate Plan throughout the Department and Assign Responsibilities

The first step toward implementing the MOU is to formally obtain concurrence on the Plan from the appropriate departmental offices. The next step is to coordinate the activities of the appropriate program offices in order to establish the overall framework for incorporating the Guiding Principles into planned and in-process building construction projects. Appropriate formal direction will be issued by DOE senior management (e.g., Assistant Secretary-level or higher) to express DOE's commitment to HPSB and the goals of the MOU. This direction will also formally establish a DOE Sustainable Building Team (SBT) at Headquarters with field representation to coordinate resources across the Department, assign responsibilities, and facilitate the concurrence process, as necessary. The Office of Energy Efficiency and Renewable Energy (EERE) will be the lead Program Secretarial Office (PSO), with the Office of Health, Safety, and Security (HSS) as well as Program Offices providing support. Also, the Office of Engineering and Construction Management (OECM) will provide project management subject expertise and advice. An *ad hoc* Sustainable Buildings Working Group comprising these and other key offices has already been formed (see Appendix C) and will facilitate the formal chartering of the SBT.

Action 1.2: Develop Key Programmatic Framework Activities, Including a Gap Analysis

While much of the policy, organizational, and administrative groundwork is already in place within Department, the following tasks will unify DOE's strategy and processes based on its commitments in the MOU.

Perform gap analysis

A gap analysis will be performed to identify policies, requirements, reports and programs that incorporate elements of the HPSB MOU and Guiding Principles. The Department-wide orders needed to implement the MOU are identified above, so the analysis will focus on identifying lower level requirements. Part of the analysis will include identifying industry standards, guidelines, rating systems and information resources, such as the Whole Building Design Guide. The gap analysis will also assess the effectiveness of the implementation for all of these requirements, resources available, and recommend specific next steps. This analysis will be carried out by a team overseen by the DOE SBT. The Implementation Plan will be updated and revised to address the "gaps" identified in the gap analysis. The roles and responsibilities in the project plan will also be further defined upon completion of the gap analysis (see Appendix E).

Track current and planned projects

This task includes developing an inventory of new building projects currently in design or construction, as well as those in the planning or pre-planning stages. Information will be collected to assess the effectiveness with which HPSB principles are or have been incorporated into the project management process according to DOE Order 413.3A. The inventory will identify those Integrated Project Teams (IPTs) that include sustainable design expertise.

Evaluate existing measurement systems

DOE has a number of systems for collecting data and other information to measure existing performance at its facilities relative to most aspects of the Guiding Principles. For example, all sites are required by Order 430.2A to report energy consumption on a quarterly basis, which EERE compiles and submits annually to OMB. Environmental aspects, such as pollution prevention, waste minimization, and materials recycling, are monitored and reported as specified in each site's EMS. An inventory of all such measurement systems will be developed, a gap analysis will be performed against the Guiding Principles, and recommendations for improving Department-wide HPSB measurement practices will be prepared.

Assess funding request process

DOE has a well established set of procedures and requirements for managing its capital asset acquisition process in accordance with OMB Circular A-11 Part 7 Section 300. This task will review the process, which typically begins with long-range projections of facility needs in the Ten Year Site Plans, formulation and prioritization of those needs in relation to five-year budget profiles for each program office, and final submittal of funding requests to the Office of the Chief Financial Officer for consideration in the DOE Corporate Program Review (CPR) process. The procedures for developing these requests will be evaluated to determine the degree to which HPSB considerations are incorporated at the earliest stages, including CD-1 Approval of Mission Need per DOE Order 413.3A (see Appendix B for details). Recommendations to senior management for improving the effectiveness of the process relative to incorporating the Guiding Principles will be developed.

Action 1.3: Review the Implementation Plan and Revise as Necessary

Upon completion of the Gap Analysis, the SBT will review the Implementation Plan and revise as necessary.

Action 1.4: Assess and Improve Utilization of Integrated Project Teams for Specific Projects

DOE Order 413.3A requires that projects be executed using IPTs. An IPT is an essential element in DOE's acquisition process and is used during all phases of a project's life cycle. It is a cross-functional team consisting of professionals that represent diverse disciplines with the specific knowledge, skills, and abilities to support the successful execution of the project. Based on the results of Action 1.2, this task will review the building construction projects that have incorporated IPTs, assess the degree to which these teams have included HPSB expertise appropriate to the project, and propose improvements.

Action 1.5: Report Success Stories and Lessons Learned

This task will identify past building construction projects that have successfully incorporated HPSB principles. Based on existing operational data, the effectiveness of their design features

will be evaluated in relation with the requirements of DOE Order 430.2A and the Guiding Principles. Lessons-learned will be developed and disseminated throughout DOE. Success stories will be reported into the High Performance Federal Building database. Those DOE buildings currently in the database can be found in the section below entitled, DOE's Current High Performance and Sustainable Buildings.

ACTION 2: IMPLEMENT NEW BUILDING PROGRAMS AND DEVELOP EXISTING BUILDING STRATEGY

While DOE has been incorporating sustainable building design into new construction for some time, the results of the gap analysis will determine whether DOE needs a more comprehensive program. This may include the issuance of guidance for HPSB under Order 430.2A as well as the possible revision of other existing Orders related to HPSB to fully incorporate the MOU's Guiding Principles. Action 2 will focus on the effectiveness of the program as it applies to new buildings either in the pre-planning (new-start) phase or under construction (in-progress). It will also continue development of the policy framework initiated in Action 1 to formulate a strategy for applying HPSB principles to existing facilities through a "sustainable recommissioning" process (See Action 2.3). Action 2 is planned to be accomplished by the end of CY 2008 and consist of the following tasks:

Action 2.1: Incorporate Guiding Principles into New-Start Projects

Due to the diversity of DOE programs and the wide distribution of sites, it is a challenging task to assess the overall number and scale of building projects that are in the pre-planning phase. Knowledge of proposed projects or related initiatives normally resides at the sites and within the program offices within DOE Headquarters. While these may be described in various long-range planning documents, such as the Ten-Year Site Plans, and included in a program's five-year budget plan, conceptual designs are not approved until CD-1, *Approve Alternative Selection and Cost Range* (see Appendix B for descriptions of Critical Decisions, or CDs). Therefore, there is generally no central database, such as OECM's Project Assessment and Reporting System (PARS), to track them, since performance baselines would not yet have been approved according to Order 413.3A requirements.

Develop inventory of new-start projects

To investigate how the Guiding Principles are being incorporated for new-start projects, it will be necessary to develop an inventory of projects that may be submitted during FY 2007 for CD-0, or *Approval of Mission Needs*. Each DOE Headquarters program office will be requested to provide a listing of such projects, along with names and contact information for the responsible program staff. Interviews will be conducted to assess the planning stage of the project, projected date for CD-0 approval, and other information relevant to the planning process for the project, including the degree to which HPSB considerations have been addressed.

Evaluate written justifications

According to the Guidance in Appendix A from the Office of the Federal Environmental Executive (OFEE), written justification will be required in order to exempt applicable new-start projects from incorporating HPSB principles in pre-planning phases. DOE will document that, where applicable, such justifications have been developed and approved.

Action 2.2: Assess and Incorporate Guiding Principles into In-Process Projects

Unlike new-start projects, DOE has several means of centrally compiling information on in-process projects, such as PARS, the annual OMB Budget Submittal, and the annual Congressional Budget Request. Additional inventories may be maintained by each DOE program office, such as the National Nuclear Security Administration's (NNSA) Integrated Construction Project Plan. However, these sources do not necessarily provide details on how HPSB design is or has been incorporated. For this reason, it is usually necessary to work directly with the program offices to obtain relevant information. Two main tasks are anticipated:

Develop inventory of in-process projects

First, an inventory of applicable projects will be developed in coordination with the respective program offices. This will provide a baseline for determining DOE's overall percentage of in-process projects that have incorporated the MOU Guiding Principles. The program office will also be requested to provide backup information, such as Project Data Sheets and OMB Exhibit 300 reports included in the Congressional Budget Request and OMB Budget Submittals, respectively. These percentages will be reported to OMB, as required by the Guidance in Appendix A, for each succeeding year through 2012.

Evaluate business case documentation

Business cases for capital asset projects are included in the Exhibit 300 reports required under OMB Circular A-11 Part 7 Section 300. DOE will document the extent to which the Guiding Principles are included for applicable projects in the Exhibit 300 business cases.

Action 2.3: Develop Existing Building Strategy for Incorporating Guiding Principles

This action will focus on developing the policy and procedural framework for incorporating the Guiding Principles into existing buildings. DOE typically undertakes this work in the context of their long-range planning process, which may vary from site to site depending on funding and mission priorities. Working in coordination with the DOE program offices, a survey of best practices across DOE for prioritizing facilities and identifying environmental aspects will be conducted. In conjunction with the survey, an inventory of "priority existing buildings" will also be developed where HPSB principles would have significant positive impact. It is expected that 'sustainable recommissioning' will be a key implementation tool for existing buildings. 'Sustainable recommissioning' is a process that will be developed to apply the Guiding Principles to improve the environmental performance of existing buildings.

A consensus Existing Building Strategy (EBS) will be developed for applying the Guiding Principles in subsequent years through Action 3, below. The EBS will include DOE's definition of a "priority existing building" to be used throughout the Strategy. The EBS will also include processes for addressing minor renovations and utilizing re-commissioning as a tool for improving HPSB performance. The inventory of priority existing buildings will be updated on an annual basis and used to measure and report progress. The EBS will be approved by appropriate DOE senior officials.

Action 2.4: Review the Implementation Plan and Revise as Necessary

The SBT will review the Implementation Plan and revise as necessary. This revision will include development of more specific activities post-2009.

ACTION 3: IMPLEMENT EXISTING BUILDING STRATEGY

Action 3 begins in January 2009 and continues through 2012, and potentially beyond. This action continues the work being done in the previous two actions, but focuses more attention on implementing the EBS developed during Action 2. More specific tasks, responsibilities, and target completion dates for this Action will be determined upon completion of the gap analysis under Action 1.2.

Action 3.1: Establish Inventory of High Performing Priority Existing Buildings

Using the definition of a "priority existing building" developed in Action 2.3, this activity includes the identification and reporting on priority existing facilities that are currently undergoing or have already undergone "sustainable recommissioning". At this time projects are generally not subject to reporting requirements.

Action 3.2: Incorporate Sustainable Recommissioning into Priority Existing Buildings

Implement the EBS for incorporating the Guiding Principles into those "priority" buildings that have not already undergone sustainable recommissioning. This implementation includes the goal of utilizing Energy Savings Performance Contracts (ESPCs) and Utility Energy Savings Contracts (UESCs) to their maximum potential. Measurement and verification (M/V) will be ensured for each of these existing building projects, with clear definitions on the expected usage of M/V in the contract language. When necessary, sustainable recommissioning will include the training of operations and maintenance staff.

Action 3.3: Track Percentage of Recommissioned Existing Buildings

Once the EBS has been developed and is being implemented in a phased approach across priority buildings requiring commissioning, the status of DOE's existing buildings will be monitored and evaluated periodically. These periodic assessments hope to ensure that DOE consistently

increases the percentage of existing buildings that have undergone commissioning so as to be in line with the *Guidance for Measuring Sustainable Building Program Implementation Progress* found in Appendix A.

Action 3.4: Consider Other Sustainable Building Opportunities

Once the process for addressing high priority buildings has been put in place and effectively implemented, DOE may begin to address sustainability opportunities for those buildings deemed “not priority” under Action 2.3.

Action 3.5: Review the Implementation Plan and Revise as Necessary

The SBT will review the Implementation Plan and revise as necessary. This revision will continue the development of more specific activities post-2009.

DOE's CURRENT HIGH PERFORMANCE AND SUSTAINABLE BUILDINGS

DOE has shown considerable leadership with regard to promoting, developing and implementing sustainable building designs. As of May 2006, DOE has five certified Leadership in Energy and Environmental Design (LEED) buildings, which are listed in the following table:

<i>Sub-Agency</i>	<i>Facility</i>	<i>Location</i>	<i>Certification</i>	<i>Date Certified</i>
Argonne National Laboratory	Central Supply Facility	Argonne, IL	Silver	21-Nov-02
Bonneville Power Administration	Ampere Annex	Vancouver, WA	Silver	02-Apr-04
Oak Ridge National Laboratory	East Campus Modernization (leased)	Oak Ridge, TN	Certified	08-Apr-04
Oak Ridge National Laboratory	Research Support Center	Oak Ridge, TN	Certified	10-Nov-05
Oak Ridge National Laboratory (with State of Tennessee)	Joint Institute for Computational Sciences	Oak Ridge, TN	Silver	27-May-05

DOE also has 8 facilities that have registered for LEED certification, but have not yet been certified. They are as follows:

- Argonne National Laboratory, Electron Microscopy Center (Argonne, IL)
- Lawrence Berkeley National Laboratory, Molecular Foundry (Berkeley, CA)
- National Renewable Energy Laboratory, Science and Technology Facility (Golden, CO)
- Oak Ridge National Laboratory (with University of Tennessee), Joint Institute for Neutron Sciences (Oak Ridge, TN)
- Pantex, Weapons Evaluation Test Laboratory (Amarillo, TX)
- Sandia National Laboratories, Center for Integrated Nanotechnologies (Albuquerque, NM)
- Sandia National Laboratories, Experimental Sciences Complex (Albuquerque, NM)
- Sandia National Laboratories, Joint Computational Engineering Laboratory (Albuquerque, NM)

In addition, DOE has five case studies located in the High Performance Federal Buildings Database, with 6 more in the process of development. This database, which was created by DOE, was incorporated into the Sustainable Buildings MOU to more easily benchmark facilities across the Federal government and share best practices among stakeholders. These case studies include:

- Bonneville Power Administration, Ampere Annex (Vancouver, WA)
- National Renewable Energy Laboratory, Solar Energy Research Facility (Golden, CO)
- National Renewable Energy Laboratory, Thermal Test Facility (Golden, CO)
- National Renewable Energy Laboratory, Wind Site Entrance Building (Golden, CO)
- Oak Ridge National Laboratory, East Campus Private Development (Oak Ridge, TN)

For these case studies and many more, visit the website for the High Performance Federal Buildings Database at: www.eere.energy.gov/femp/highperformance/index.cfm

APPENDIX A: Guidance from OFEE for Measuring Sustainable Building Program Implementation Progress

Sustainable design/green building is a relatively new issue for some agencies without the structure and mandates of other environmental initiatives. In light of this, OFEE facilitated the Interagency Sustainability Working Group (ISWG) in establishing ‘milestones and deliverables’ that will allow Agencies to measure their progress towards implementing the Federal Leadership in High Performance and Sustainable Buildings MOU.

Phase	<u>Recommended Milestones and Deliverables for Measuring Progress</u>
1	<ul style="list-style-type: none"> • Issue Sustainable Design/Green Buildings Policy and Implementation Plan that: <ul style="list-style-type: none"> -Defines applicable building projects (i.e., new buildings, leases, build-to-lease projects, and major and minor renovations) based on building type, size, and/or budget. -Complies with OMB Circular A-11 Part 7 Section 300 - Planning, Budgeting, Acquisition, and Management of Capital Assets.
2	<ul style="list-style-type: none"> • Key programmatic framework activities are implemented including: policies, responsibilities, tracking, measurement, and funding requests. • Agency employs integrated teams at the earliest stages of project planning (i.e., pre-funding, conceptual design) for all capital asset projects involving new buildings, build-to-lease, and/or major renovations in order to address the <i>Guiding Principles</i>, except where written justification is provided. • The success stories and lessons learned for at least one major building project is reported into the High Performance Federal Buildings Database (www.eere.energy.gov/femp/highperformance/index.cfm) (provided the agency has an applicable project to report).
3	<ul style="list-style-type: none"> • All applicable ‘new start’ capital asset projects involving new buildings, build-to-lease, and/or major renovations incorporate the <i>Guiding Principles</i>, except where written justification is provided. • In order to apply the <i>Guiding Principles</i> to “in process” building projects, all business cases for new building construction or major renovations, developed per OMB A-11 Part 7 Section 300, incorporate the <i>Guiding Principles</i>, to the greatest extent practicable. • In order to maximize opportunities for incorporating the <i>Guiding Principles</i> into existing buildings, an Existing Building Strategy—which identifies priority facilities and environmental aspects (including energy use and IEQ), addresses minor renovations, and utilizes recommissioning as a tool—is developed and signed by senior officials.
4	At least 5 percent of priority existing facilities have undergone sustainability recommissioning per the Existing Building Strategy.
5	<ul style="list-style-type: none"> • At least 10 percent of priority existing facilities have undergone sustainability recommissioning per the Existing Building Strategy. • At least 2 percent of agency’s existing building inventory incorporates the <i>Guiding Principles</i> to the greatest extent practicable.
6	<ul style="list-style-type: none"> • At least 25 percent of priority existing facilities have undergone sustainability recommissioning per the Existing Building Strategy. • At least 3 percent of agency’s existing building inventory incorporates the <i>Guiding Principles</i> to the greatest extent practicable.

7	<ul style="list-style-type: none"> • At least 40 percent of priority existing facilities have undergone sustainability recommissioning per the Existing Building Strategy. • At least 6 percent of agency's existing building inventory incorporates the <i>Guiding Principles</i> to the greatest extent practicable.
8	<ul style="list-style-type: none"> • At least 60 percent of priority existing facilities have undergone sustainability recommissioning per the Existing Building Strategy. • At least 9 percent of agency's existing building inventory incorporates the <i>Guiding Principles</i> to the greatest extent practicable.
9	<ul style="list-style-type: none"> • At least 80 percent of priority existing facilities have undergone sustainability recommissioning per the Existing Building Strategy. • At least 12 percent of agency's existing building inventory incorporates the <i>Guiding Principles</i> to the greatest extent practicable.
10	<ul style="list-style-type: none"> • 100 percent of priority existing facilities have undergone sustainability recommissioning per the Existing Building Strategy. • At least 15 percent of agency's existing building inventory incorporates the <i>Guiding Principles</i> to the greatest extent practicable.

APPENDIX B: Overview of DOE Order 413.3A – Program and Project Management for the Acquisition of Capital Assets

The Order provides the Department’s overall direction and requirements for delivering capital asset projects on schedule, within budget, and fully capable of meeting both mission performance objectives and environment, safety, and health standards. It establishes a management process to transform project needs and technological opportunities into reliable and sustainable capabilities that meet DOE mission needs within Federal requirements and guidance.

Applicability

The Order is applicable to capital asset acquisition projects having total project costs (TPCs) or life cycle costs for Clean-Up Projects greater than or equal to \$20M. Principles of the Order and reporting requirements for the Project Assessment and Reporting System (PARS) apply to all projects with a TPC greater than or equal to \$5M.

Requirements

The requirements identified in the Order are based on the project phases and critical decisions in a project’s lifecycle illustrated in Figure 1. These phases begin with a project’s Initiation phase, and continue through Definition, Execution, and finally Transition/Completion. As the project progresses through each phase, the following key milestones, known as Critical Decisions (CDs), are achieved:

- Approve Mission Need (CD-0)
- Approve Alternative Selection and Cost Range (CD-1)
- Approve Performance Baseline (CD-2)
- Approve Start of Construction (CD-3)
- Approve Start of Operations or Project Completion (CD-4)

CDs provide a structure for project planning that emphasizes mission need, safety, risk, performance, and affordability. Because of the unique and broad nature of DOE’s missions, the Order provides guidance for the definition of sub-phases or for tailoring of project requirements based on project complexity, schedule, cost, and risks. The Order also identifies specific deliverables required to obtain each CD approval, including plans, documents, reviews, and reports.

High Performance Sustainable Building (HPSB) Requirements

The Order requires that HPSB considerations be documented in a Conceptual Design Report (CDR) and Acquisition Strategy (AS), as appropriate. The CDR requires an integrated systems engineering effort that results in a clear and concise definition of the project, including HPSB design features. The AS describes the high-level business and technical management approach designed to achieve project objectives, including HPSB aspects, within specified resource constraints. The CDR and AS are reviewed and approved at CD-1.

CD-2 requires preparation and review of a Preliminary Design. This document supports development of a Performance Baseline and incorporates Preliminary Sustainable Environmental Stewardship/HPSB provisions.

CD-3 requires completion and review of a Final Design that is sufficiently mature to start procurement or construction. An External Independent Review (EIR) is required for projects

with TPC > \$750M, and an Independent Project Review is required for those with TPC < \$750. The Final Design and EIR must incorporate the Final Sustainable Environmental Stewardship/HPSB provisions.

CD-4 requires a Commissioning Plan to ensure that equipment, systems and facilities include High Performance and Sustainable Building systems perform as designed, and are optimized for greatest energy efficiency, resource conservation and occupant satisfaction.

Roles and Responsibilities

Roles and responsibilities of key DOE senior managers are recognized, and applicable reference/guidance documents are cited. An Acquisition Executive (AE) is identified according to a specified series of total project cost (TPC) thresholds. Other senior managers serve on an Energy Systems Acquisition Advisory Board (ESAAB) or its equivalent to advise the AE in CD and other major project approvals. Although the DOE to a large extent relies on contractors, universities, and other partners for the day-to-day project execution and management; ultimately, the overall execution, management, and performance of DOE's mission remains the responsibility of DOE Federal officials. The Order provides the guidance and flexibility to assist these managers.

An Integrated Project Team (IPT) is an essential element in DOE's acquisition process and is used during all phases of a project's life cycle. This team consists of professionals representing diverse disciplines with the specific knowledge, skills, and abilities to support the successful execution of the project.

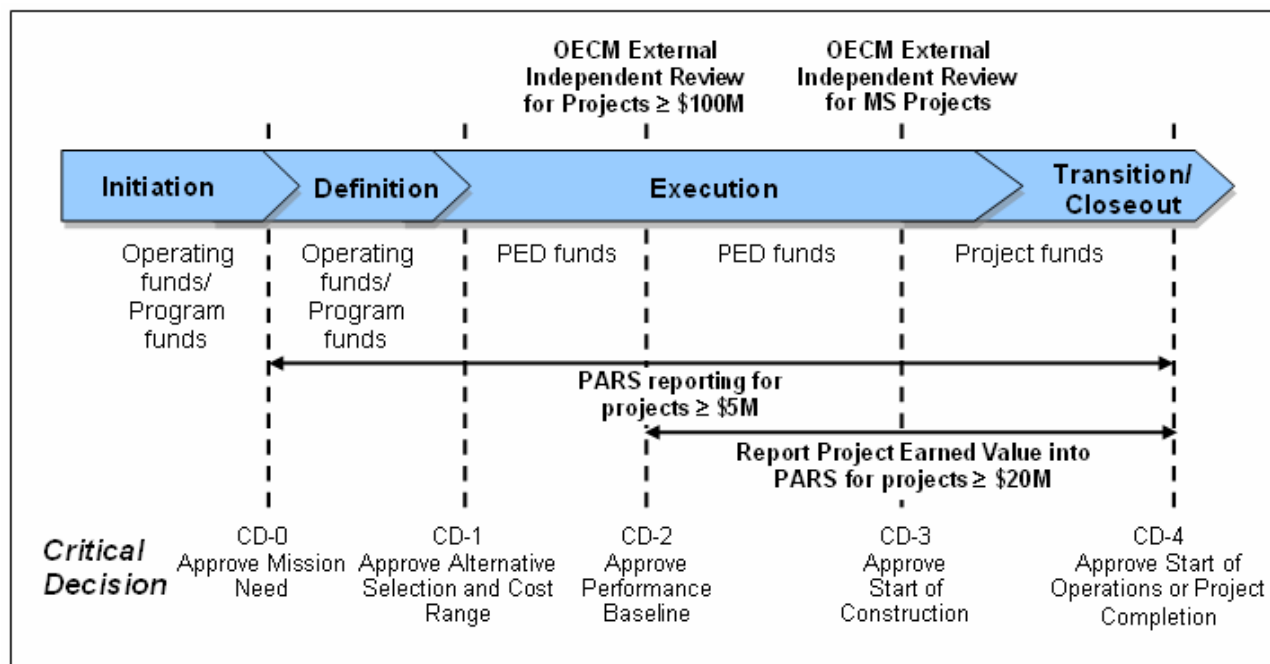


Figure 1. Typical DOE Acquisition Management System for Line Item Projects

APPENDIX C: DOE Sustainable Buildings Integrated Project Team

<i>Last Name</i>	<i>First Name</i>	<i>Organization</i>
Crawley	Anne	EERE – Federal Energy Management Program (FEMP)
Gray	Matt	EERE – Federal Energy Management Program (FEMP)
Lintner	Will	EERE – Federal Energy Management Program (FEMP)
Nasseri	Cyrus	EERE – Federal Energy Management Program (FEMP)
Gorelick	Marvin	EERE – Office of Information and Business Mgmt
Lawrence	Othalene	EERE – Office of Information and Business Mgmt
Chang	Ker-Chi	Environmental Management (EM)
Bascietto	John	Health, Safety and Security (HSS)
Lentzen	Donald	Health, Safety and Security (HSS)
Traceski	Thomas	Health, Safety and Security (HSS)
Makepeace	John	Management (MA) - OECM
O’Konski	Peter	Management (MA) - OECM
Sinkler	Randy	Management (MA) - OECM
Baker	John	National Nuclear Security Administration
Thorpe	Richard	National Nuclear Security Administration
Cummings	Rodney	Nuclear Energy (NE) – Facilities Management
Miller	Larry	Nuclear Energy (NE) – Facilities Management
McCune	Mary	Nuclear Energy (NE) – Integrated Safety and Program Assurance
Edelman	Arnie	Science – Environment, Safety and Health Division
Yates	John	Science – Lab Infrastructure Division


















Additional Contacts

<i>Last Name</i>	<i>First Name</i>	<i>Organization</i>
Fowler	Kim	Pacific Northwest National Laboratory
Farrar-Nagy	Sara	National Renewable Energy Laboratory
Hayter	Sheila	National Renewable Energy Laboratory

APPENDIX D: Acronym List

AE	Acquisition Executive
AS	Acquisition Strategy
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
CD	Critical Decision
CDR	Conceptual Design Report
CPR	Corporate Program Review
CY	Calendar Year
DOE	Department of Energy
EBS	Existing Building Strategy
EERE	Energy Efficiency and Renewable Energy
EIR	External Independent Review
EM	Environmental Management
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPAct	Energy Policy Act
ESAAB	Energy Systems Acquisition Advisory Board
ESPC	Energy Savings Performance Contract
FEMP	Federal Energy Management Program
HPSB	High Performance Sustainable Building
HSS	Health, Safety and Security
IESNA	Illuminating Engineering Society of North America
IPT	Integrated Project Team
ISWG	Interagency Sustainability Working Group
LEED	Leadership in Energy and Environmental Design
M/V	Measurement / Verification
MA	Management
MOU	Memorandum of Understanding
NE	Nuclear Energy
NNSA	National Nuclear Security Administration
OECM	Office of Engineering and Construction Management
OFEE	Office of the Federal Environmental Executive
OMB	Office of Management and Budget
PARS	Project Assessment and Reporting System
PED	Project Engineering and Design
PSO	Program Secretarial Office
SBT	Sustainable Building Team
TPC	Total Project Cost
M	Million
UESC	Utility Energy Savings Contract
USDA	United States Department of Agriculture

APPENDIX E: Summary of the DOE Sustainable Building Team Implementation Plan

ID	Task Name	2007					2008				2009				2010
		Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
1	COORDINATE DOE POLICIES & ESTABLISH PROGRAMMATIC FRAMEWORK														
2	Action 1.1: Coordinate Plan throughout the Department and Assign Responsibilities						SBT								
3	Action 1.2: Develop Key Programmatic Framework Activities, including a Gap Analysis						TBA (Lead), All (Support)								
4	Action 1.3: Review the Implementation Plan and Revise as Necessary						SBT								
5	Action 1.4: Assess and Improve Utilization of Integrated Project Teams for Specific Projects						TBA (Lead), All (Support)								
6	Action 1.5: Report Success Stories and Lessons Learned						FEMP (Lead), All (Support)								
7	IMPLEMENT NEW BUILDING PROGRAMS & DEVELOP EXISTING BUILDING STRATEGY														
8	Action 2.1: Incorporate Guiding Principles into New-Start Projects	TBA (Lead), All (Support)													
9	Action 2.2: Assess and Incorporate Guiding Principles into In-Process Projects	TBA (Lead), All (Support)													
10	Action 2.3: Develop Existing Building Strategy for Incorporating Guiding Principles						SBT								
11	Action 2.4: Review the Implementation Plan and Revise as Necessary						SBT								
12	IMPLEMENT EXISTING BUILDING STRATEGY														
13	Action 3.1: Establish Inventory of High Performing Priority Existing Buildings						FEMP (Lead), All (Support)								
14	Action 3.2: Incorporate Sustainable Recommissioning into Priority Existing Buildings						TBA (Lead), All (Support)								
15	Action 3.3: Track Percentage of Recommissioned Existing Buildings						TBA (Lead), All (Support)								
16	Action 3.4: Consider Other Sustainable Building Opportunities										SBT				
17	Action 3.5: Review the Implementation Plan and Revise as Necessary										SBT				

 = The task will likely be continued in subsequent years